LAWRENCE LIVERMORE REPORT

A weekly collection of scientific and technological achievements from Lawrence Livermore National Laboratory: Nov. 24-Dec. 5, 2008.

The Lab's ELITE™ scheduled to star on CSI Miami

Left to right: Del Eckels, John Reynolds and Peter Nunes, all of the Lab's Forensic Science Center.

An explosives detector developed by LLNL Forensic Science Center researchers could hit the big time on television tonight (Dec. 8), as it is slated to be shown on the CBS network television series, "CSI Miami."

The team of Lab scientists who developed the Easy Livermore Inspection Test for Explosives (ELITE™) detector was informed that their technology would be on the show by Craig Johnson, the president and CEO of Largo, Fla.-based Field Forensics Inc.

The people at "CSI Miami" have assured us that the ELITE™ will be obvious and our logo will be obvious, too, wrote Johnson, whose firm licensed the Livermore technology in 2005.

“We’re not entirely sure how it’s going to appear, so we’ll have to wait for Monday night to find out.”

ELITE™ is highly sensitive to more than 40 different explosives, making it one of the most effective trace explosive detection systems available.

With an ELITE™ detector, about the size of a playing card, border patrol agents, security agents, airport screeners, first responders and military personnel can secure real-time results within about 90 seconds as to whether explosives are present.

"CSI Miami" airs at 10 p.m. tonight on CBS.

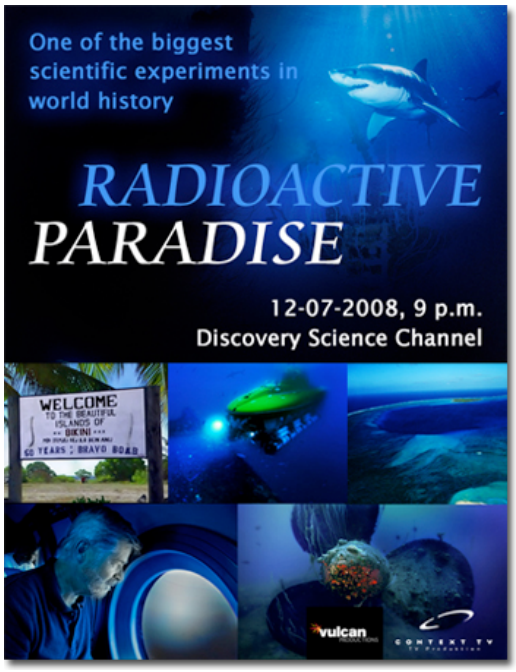
Lab blows through KQED’s Quest Lab

KQED’s Quest Lab program recently featured LLNL’s Jon Maienschein who explained how explosions work at the Laboratory’s High Explosives Applications Facility (HEAF).

“In other words, I blow things up for a living,” Maienschein said on the program.

To see the program, go to https://publicaffairs.llnl.gov/news/llnl_reports/heaf_kqed-quest_25nov2008.mov

Bikini Island documentary on Discovery Channel



A documentary by Context TV on the atomic tests conducted on Bikini Island aired on the Discovery Channel's "Discovery Science" program on Dec. 7.

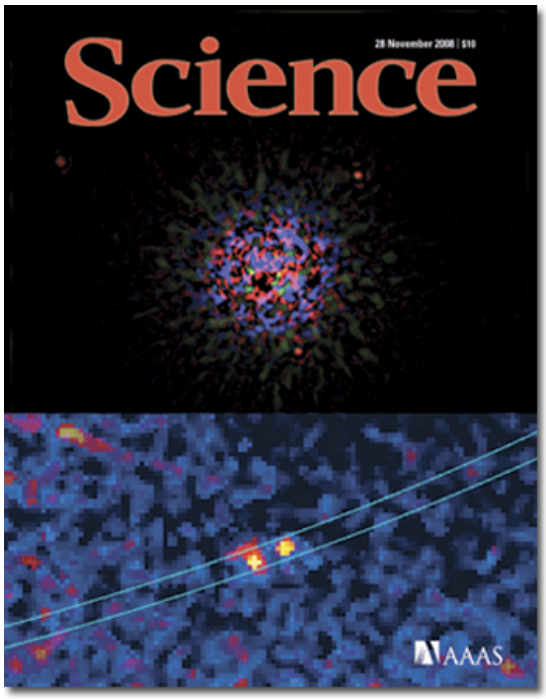
After several years of research, several trips to the Marshall Islands and the United States, the company in collaboration with VULCAN productions, aired the show that features scientists, historians and divers at the storied Bikini Atoll to see the effects of 23 atmospheric atomic test blasts up close. With the help of a high-tech submersible, the Pagoo, they explore Bikini's underwater ship graveyard resulting from one of the most spectacular scientific and nuclear experiments ever conducted.

Livermore has held a key position in the radioactive monitoring at and around the Marshall Islands. The directives of the Marshall Islands Dose Assessment and Radioecology Program conducted at the Lawrence Livermore National Laboratory are (1) to provide technical support services and oversight in establishing radiological surveillance monitoring programs for resettled and resettling populations in the northern Marshall Islands; (2) to develop comprehensive assessments of current (and potential changing) radiological

conditions on the islands; and (3) provide recommendations for remediation of contaminated sites and verify the effects of any actions taken.

For more information on the program, go to
http://www.context.tv/index.php?project_id=5

Science covers LLNL's first images of entire solar system



LLNL scientist Bruce Macintosh was the co-lead of an eight-author team whose article on “Direct Imaging of Multiple Planets Orbiting the Star HR 8799” garnered the cover of the Nov. 28 issue of the journal, *Science*.

The direct imaging results were previously featured on the front page of *The New York Times* (Nov 14) after the results first appeared in *Science Express* on Nov 13.

To read the article, go to
http://www.sciencemag.org/cgi/content/full/sci;322/5906/1348

LLNL's Larry Thompson earns EMS award

Larry Thompson (right) receives the Environmental Mutagen Society award from Andrew Wyrobek, EMS president.

Larry Thompson, a molecular biologist in the Biosciences and Biotechnology Division of Physical and Life Sciences at the Laboratory, has received the 2008 EMS Award. The award is given to one individual annually by the Environmental Mutagen Society (EMS) in recognition of "outstanding research contributions in the area of environmental mutagenesis."

Thompson's research during his more than 35 years at LLNL has focused on the biological processes by which DNA is repaired *in vivo.* Specifically cited by the EMS was his "Application of Mammalian Somatic Cell Genetics to the Study of Mutagenesis and the Cloning of DNA Repair Genes."
This is the second external award for Thompson this year. He also received the Barbara Bowman Distinguished Texas Geneticist Award from the Texas Genetics Society.

Photo of the week

On the road to clean energy -- Energy Secretary Samuel Bodman (at left) visits the Lab’s National Ignition Facility during a Bay Area visit last week. At right, NIF Principal Associate Director Ed Moses discusses the fusion energy potential once NIF is completed in spring 2009.

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LLNL applies and advances science and technology to help ensure national security and global stability. Through multi-disciplinary research and development, with particular expertise in high-energy-density physics, laser science, high-performance computing and science/engineering at the nanometer/subpicosecond scale, LLNL innovations improve security, meet energy and environmental needs and strengthen U.S. economic competitiveness. The Laboratory also partners with other research institutions, universities and industry to bring the full weight of the nation's science and technology community to bear on solving problems of national importance.

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